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REMARKS

Status of the Claims

In the Office Action, claims 1,2, 4-15 and 17-22 are noted as pending in the application. All claims stand rejected.

A. Summary of Cited References

Before addressing the Examiner's rejections, a brief summary of the cited references is provided.

U.S. Patent number 6,952,571 to Garrabrant, et. al. ("Garrabant")

Garrabrant relates to updating the status of a digital signal processor based on the signal strength of a single communication channel. Title. A radio signal strength indicator ("RSSI") is used to provide visual indication of a particular broadcast network's channel signal strength. Col. 8, lines 42-45. A digital signal processor ("DSP") monitors the channel signal strength fluctuations and a main processor is awakened from a low power mode if the range of fluctuation exceeds a predetermined value. Col. 9, lines 61-65. The main processor provides a particular channel to measure. Col. 9, lines 12-14. The "main processor may be instructed to search for an acceptable broadcast channel with which it may continue the wireless connection previously obtained." Col. 10, lines 4-7.

U.S. Patent number 6,901,276 to Skinner, et. al. ("Skinner")

Skinner relates to using a DSP to directly control a multi channel scan of communications channels available to re-establish connections to a wireless device. Title. When the DSP identifies acceptable channels, it wakes up the main processor and identifies the channels having sufficient strength. Abstract.

U.S. Patent Publication number 2004/0033812 to Matsunaga, et. al. ("Matsunaga")

Matsunaga relates to the use of a wireless LAN card in a computer. If an AC power source is not currently providing power to the host computer, then the wireless LAN card is set to a power saved mode. Page 4, par [52]. When in the power save mode, the base band processor and the media access control continue to receive power from the current power source (typically a battery). Page 4, par. [53].

U.S. Patent number 6,085,114 to Gibbons, et. al. ("Gibbons")

Gibbons relates to operation of a remote wireless device when it looses AC power. When AC power is lost at he remote unit, it is synchronized to a TDD timing structure in a sleep mode. Col. 2, lines 41-43. The remote receiver scans for incoming CONNECT messages during a standby mode. Col. 2, lines 43-46. If no CONNECT message is present, the receiver re-enters sleep mode for a predetermined period, which equals a predetermined number of subframes corresponding to the identification number of the remote unit. Col. 2, lines 46-52. The base station may provide a message to the remote unit using a spread spectrum signal, thus indicating that communication signal frequencies may always be present to the remote unit. Col. 3, lines 1-44.

B. Response to Examiner's Remarks

Examiner appears to have repeated the same arguments made in the previous office action in continuing the rejection. Thus, the remarks made in response to the previous office action are repeated in sections below. In addition, Examiner has provided remarks in response to arguments advanced by Applicant in response to the previous office action. Applicant responds to these remarks in this section B below.

Examiner states that Garrabrandt discloses a main processor and a DSP. Further, Examiner states that Garrabrandt discloses a transceiver that provides an RF link and communication circuitry that is analogous to the RF circuitry that is part of the processor claimed in claim 1.

Claim 1 recites that the processor has RF circuitry. In reference to FIG. 1, the present application discloses at page 10, lines 1-4, that processor 26 includes "memory . . ., RF tuners and related circuitry, and other common components commonly found in a cable modem . . . ." Thus, power-consuming RF tuner circuitry that is used to tune different channel frequencies is turned off when processor 26 is in sleep mode. This provides the advantage that when processor 26 is in sleep mode to conserve power, power use is further reduced by also 'putting to sleep' the RF circuitry.

This advantageous arrangement is not disclosed in Garrabrandt. FIG. 4 in Garrabrandt shows that signal input/output device 144 is not part of processor 131 or DSP 136. Moreover, processor 131 is a microprocessor coupled to bus 130 as shown in FIG. 4. Thus, Garrabrandt does not disclose the structural element of a processor (circuits that compose a cable modem) having RF circuitry, as recited in claim 1. Furthermore, the Garrabrandt reference does not teach that the signal input-output device 144 turns off when either processor 136 or DSP 131 is off. Indeed, "transceiver 144 provides a wireless radio frequency (RF) communications link between computer system 100 and other devices . . . ." Col. 7, lines 50-52. Before entering a low power state, processor 131 instructs DSP 136 to also enter a low power state for a period. After a period elapses, DSP 136 awakens and measures a RF frequency as instructed by main processor 131 before it entered sleep, or low power mode. FIG. 5, and Col. 9, lines 6-30. The DSP measures signal strength of a wireless connection (the signal is provided by RF transceiver 144) when awakened following the period at a frequency instructed by the main processor before it entered sleep mode. Col. 9, lines 14-16. However, there is no teaching in the text of the accompany FIG. 5 of the Garrabrandt reference stating that the transceiver 144 enters a low power mode until awakened.

In contrast, as discussed above, the RF circuitry that is part of processor 26 described in the present application sleeps while processor 26 sleeps, as claimed in claim 1. This provides more power savings than the Garrabrandt reference teaches, because the reference does not teach that the RF transceiver circuit, as well as any other circuits typically found in a cable modem, sleeps. Thus, all of the claimed elements are not found in the reference.

With respect to the Skinner reference, both Skinner and Garrabrandt were assigned to the same assignee at issuance. FIGS. 4 of both references contain a similar diagram, although the reference numbers are different. Furthermore, the text passages related to the transceiver 144 in Garrabrandt and transceiver 408 are similar. Therefore, similar analysis as given above with respect to claim 1 vis-à-vis Garrabrandt applies with respect to claim1 vis-à-vis Skinner.

In addition, Skinner expressly states that DSP 422 directs the process of scanning the broadcast channels used by the wireless network, thus allowing main processor 450 to remain asleep to conserve power. Examiner seems to have analogized transceiver 408 with the RF circuitry that is part of processor 26 that is received in claim 1. Since transceiver 408 in Skinner stays active while main processor 450 is asleep, so that RF channel information can be scanned and measured, Skinner, as well as Garrabrandt, disclose that the transceiver does not turn off, or enter sleep mode, when the main processor is off. Thus, neither Skinner nor Garrabrandt disclose the limitations recited in claim 1 of ". . . scanning a plurality of possible RF channels using a processor having RF circuitry to detect whether an RF channel is present that can be made active; placing the processor into a sleep mode if an active RF channel or an RF channel that can be made active is not detected . . ." Neither reference discloses that the main processor has RF circuitry and that the processor goes into a sleep mode, thus causing the RF circuitry that is part thereof to also go into sleep mode. Withdrawal of the rejection is respectfully requested.

Similar analysis applies to claim 4 as applies to claim 1, inasmuch as the portion put to sleep as recited in claim 4 includes main processor circuitry and RF communication circuitry. Similar analysis also applies to claim 5.

In addition, Garrabrandt does not disclose an RF energy detecting means as recited in claim 5. Claim 5 recites ". . . determining whether RF energy is present at the network connection using an RF energy detecting means . . . ." The detecting means in the claim refers to the RF detector 48 and logic interface 50 generating a signal that indicates the presence of RF energy, even though the RF circuitry of processor 26 is in sleep mode. As disclosed in the application, the RF energy detecting means does not include all of the RF circuitry that is included in the processor circuitry that goes into sleep mode, but merely includes circuitry that can detect whether any energy in a certain frequency band is present.

Accepting for the sake of argument correspondence between the RF circuitry recited in the claim and the transceiver(s) discussed in the reference(s), since transceiver 144/408 is/are the only RF circuitry disclosed in the references, and notwithstanding that the claimed RF circuitry sleeps as opposed to the transceivers discussed in the references never sleeping; the references necessarily cannot disclose the RF detecting means. The "radio frequency communication circuitry" and the "RF energy detecting means" are recited separately in the claim 5. Therefore, if, the transceiver(s) in the reference(s) are synonymous with the RF circuitry recited in claim 5, the transceiver(s) cannot be the RF detecting means. Withdrawal of the rejection is respectfully requested.

With respect to Examiner's statement in the current office action that "Applicant[] argue[s] that the reference teaches that the RF circuitry sleeps while in sleep mode (as related to communication circuit 135)" clarification is requested. Applicant states that the RF circuitry recited in the claims of the present application can sleep while the processor circuitry of which it is part sleeps. Applicant also has shown that the transceiver(s) in the references does/do not sleep while processor 131 sleeps. Communication circuit 135 in Garrabrandt is not RF circuitry. Circuit 135 "is a universal asynchronous receiver-transmitter (UART) module that provides the receiving and transmitting circuits required for serial communication for both the serial port and infrared port." Garrabrandt col. 8, lines 7-11. Applicant is unclear what Examiner meant

by the statement in the office action since the communication circuitry in Garrabrandt is not RF circuitry.

Examiner seems to be using this statement as support for disagreeing with Applicant's position that Garrabrandt teaches a processor that sleeps (DSP 136) but does not teach that RF circuitry sleeps. As discussed above, circuit 135 in Garrabrandt is not RF circuitry. As discussed in the present application, RF circuitry includes tuners, detectors, heterodyne circuits, mixers, etc. In other words, the radio frequency communication circuitry recited in the claims comprises a radio. The UART discussed in the reference is not a radio. Thus, communication circuit 135 is not RF circuitry.

Furthermore, the DSP shown in the reference does not "inherently include[] radio frequency communication circuitry" as stated by Examiner. The DSP monitors signals that have been processed by transceiver 144, which is RF circuitry as discussed above. If the DSP was in fact RF circuitry, there would be no need for transceiver 144. Therefore, neither DSP nor circuit 135 is RF circuitry.

In addition, as shown in FIG. 4 of Garrabrandt, DSP 136 appears to be part of circuit 135, which is coupled to bus 130. However, the block representing DSP 136 is shown inside of the block representing circuit 135. Thus, DSP can be in sleep mode without the entire circuit 135 being in sleep mode. Therefore, if for the sake of argument one were to consider circuit 135 as RF circuitry, Garrabrandt does not teach that it sleeps when processor 131 sleeps.

Another basis that Applicant believes Examiner may rely on for his disagreement is the position that the DSP is RF circuitry. Such a position is erroneous. As discussed above, the DSP processes signals that are received/transmitted from/to the transceiver. The DSP is a Digital Signal Processor, a device type that typically does not include RF circuitry. Moreover, Examiner, in stating that he disagrees with Applicant's position states that ". . . the transceiver [] provides the wireless communication radio frequency (RF) link . . . ." Office Action page 4, lines 18-19. As discussed above, the transceiver is the only RF circuitry disclosed in the reference. Applicant agrees with the statement by Examiner on page 4 that the transceiver provides the RF link to the DSP, because the DSP is not RF circuitry. Otherwise, if the DSP is considered RF circuitry, which it cannot be as discussed above, there would be no need for the transceiver. Accordingly, Applicant's position that the references do not teach that a processor that includes RF circuitry sleeps is sound. Withdrawal of the rejection is respectfully requested.

Since Examiner repeated the rejections made in the previous office action, Applicant repeats the remarks made in response to the previous office action below. The following remarks, as well as the foregoing remarks, show that the subject matter recited in the claims of the present application are not found in the references, either alone or in combination. The foregoing remarks are given in response to Examiner's comments, which he gave in response to Applicant's previous arguments, with respect to the independent claims. Since the above comments show that independent claims 1, 4 and 5 patentably distinguish over the cited references, the dependent claims that depend there from also patentably distinguish over the references. Withdrawal of the rejection is respectfully requested.

With respect to the rejection of claim 8, the controller recited in the claim refers to a micro controller as described in the application at page 9, line 19. The element of claim 8 that recites a controller is written in means-plus-function format. The controller

element "may be expressed as a means for . . . performing a specified function without the recital of structure . . ., and such claim shall be construed to cover the corresponding structure . . . described in the specification and equivalents thereof." 35 U.S.C. § 112, par. 6. In re Van Guens cited by Examiner cites In re Zletz, 893 F.2d 319, 321 (Fed. Cir. 1989). Examiner cites In re Van Guens for the proposition that limitations from the specification are not to be read into claims during examination. In both In re Van Guens and In re Zletz, the claims at issue were actually interference counts. In addition, the counts were not written in means-plus-function format. Therefore, In re Van Guens and In re Zletz are not applicable to claims written in means-plus-function format. Since Applicant presented claim 8 in means-plus-function format, and the specification refers to the controller means as a micro controller, by operation of law the claim includes the structure of a microcontroller even without the recital of structure. Withdrawal of the rejection is respectfully requested. Since claim 8 patentably distinguishes over the references, so to do the dependent claims that depend there from. Withdrawal of the rejection is respectfully requested.

C. The Claims are not Obvious over the Cited References

Applicant respectfully submits that the subject matter of the claims patentably distinguish over the cited references. Under MPEP § 2142, for an examiner to establish a *prima facie* case of obviousness, "three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure." If any of these three criteria are not met, the Examiner has not met the burden of establishing a *prima facie* case of obviousness, and the rejection should be withdrawn.

Furthermore, each dependent claim includes all of the limitations of the independent claim from which it depends. If an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is non-obvious. MPEP §2143.03, citing In re Fine, 837 F.2d 1071 (Fed. Cir. 1988). Applicant respectfully submits that the burden of establishing a *prima facie* case of obviousness has not been met.

D. Rejection of claims

On page 2 of the Office Action, claims 1 and 3-6 are rejected under 35 U.S.C. § 103 as being obvious over Garrabrant in view of Skinner. Claim 1 claims in pertinent part:

> . . . scanning a plurality of possible RF channels using a processor having RF circuitry to detect whether an RF channel is present that can be made active;
>
> placing the processor into a sleep mode if an active RF channel or an RF channel that can be made active is not detected;
>
> starting a timer set for a predetermined period if an active channel or one of the plurality of possible RF channels is not detected; and

awakening the processor from sleep mode when the predetermined period has elapsed . . . .

Garrabrant does not disclose a processor having RF circuitry. Neither does Skinner.

Claim 1 is amended to recite that the processor used to scan for available RF channels includes RF circuitry, as disclosed in the specification at page 10, lines 1-2. The references, either alone or in combination, do not disclose all of the claim limitations, because each specifically teaches that RF transceiver circuitry is separate from the processor (Garrabrant Col. 1, lines 47-56; and Skinner col. 1, lines 33-40). Furthermore, there is no suggestion to combine the references because shutting down the processor circuitry in the references still leaves the RF circuitry active; this would not result in a likelihood of success by combining the reference teachings. Withdrawal of the rejection is respectfully requested.

Claim 3 is canceled by previous amendment.

With respect to claim 4, as filed it contains the limitations of claim 1. These limitations have been written into the claim by this amendment to place it into independent form. Thus, the scope of claim 4 is not changed by this amendment.

Claim 4 is similar to claim 1 in that that the processor circuitry and RF circuitry are placed into sleep mode. Thus, as under the analysis of claim 1 above, the references do not render claim 4 obvious because neither of the references teaches that the RF circuitry sleeps while in sleep mode. In FIG. 4 in Garrabrant, the DSP 136 appears to be part of, or shares connection to bus 130 with, communication circuit 135. Garrabrant teaches that DSP 136 sleeps during sleep mode, col. 9, lines 20-23, but does not teach that communication circuit 135 sleeps. Thus, communication circuit 135 is always on and consuming power. This contrasts with limitations recited in claims 1 and 4, in which the RF circuitry sleeps, thus not consuming power during sleep mode. Accordingly, independent claims 1 and 4 patentably distinguish over the references. Withdrawal of the rejection is respectfully requested.

Claim 5 is similar to claim 4, but in claim 5, an RF detecting means is used while the main processor is in sleep mode. The RF detecting means does not typically possess a full complement of RF tuner components, but using minimal components can determine whether energy that may correspond to an RF communication channel is present. This is described in the specification at page 16, lines 15-24. Thus, claim 5 distinguishes over the references because the RF circuitry, recited in the claim, which consumes the most power, sleeps. In contrast, the references do not teach that the comparable circuitry discussed therein sleep during sleep mode. Thus, all the limitations recited in claim 5 are not found in the references.

Regarding Skinner, vis-à-vis the rejection of claim 5, the RF circuitry in Skinner does not operate as claimed in the recited limitations. The full RF circuitry stays on in Skinner to work in conjunction with the DSP to scan available channels. This contrasts with the claimed limitation of merely detecting the presence of RF energy while the processor sleeps. As recited in the claim, the processor does not wake to scan the communication channels until after the presence of RF energy has been detected. Thus, the claim patentably distinguishes over the references. Withdrawal of the rejection is respectfully requested.

Claim 8 claims a controller for controlling operation of the UPS. Garrabrant discloses using a DSP, which is more sophisticated than a micro controller. Thus, a micro controller is not disclosed in Garrabrant, either being coupled to the UPS or not. Regarding the secondary reference, Gibbons does not disclose that the controller receives an instruction from the component to be put to sleep, which is the processor in claim 8. In Gibbons, the controller is the sole component that determines whether another component is to be put to sleep or not. Thus, all the elements of claim 8 are not found in the references, either alone or in combination. Furthermore, there cannot be a reasonable expectation of success in combining the teachings of the cited references because to demonstrate such an expectation would require that the controller in Gibbons shut itself down, thus preventing the controller from "periodically interrupt[ing] [sleep mode operation] by the controller. Gibbons, col. 2, lines 60-61. Therefore, claim 8 patentably distinguishes over the references. Withdrawal of the rejection is respectfully requested.

In addition, claim 9 distinguishes over the references because, as discussed above, the RF detecting means is not the same component as the RF circuitry contained in the processor that goes into sleep mode. The RF detecting means does not sleep while the more robust RF circuitry of the processor does. Therefore, all the claim limitations are not found in the references. Similar analysis applies with respect to claim 10.

Regarding claim 17, similar analysis applies as to claim 8 as provided above.

Moreover, as demonstrated above, the independent claims patentably distinguish over the references. All of the other rejected claims depend from these independent claims and therefore contain all of the limitations contained in their respective base claims. Accordingly, under MPEP §§2142 §2143.03, these dependent claims also patentably distinguish over the references and withdrawal of the rejection is respectfully requested.

For all the reasons advanced above, Applicant respectfully submits that the application is in condition for allowance and that action is earnestly solicited.

If the Examiner believes that there are any issues that can be resolved by a telephone conference, or that there are any informalities that can be corrected by an Examiner's amendment please contact the undersigned at the mailing address, telephone, facsimile number, or e-mail address indicated below.

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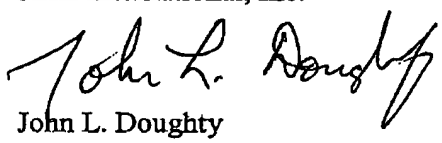

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